Title: Dawn Field Theory: The Recursive Balance Field as a Post-Stoic Potential in Schrödinger's Equation

Abstract: This report introduces the Recursive Balance Field (RBF) under the newly designated Dawn Field Theory. RBF acts as a physically emergent, dynamic potential that replaces traditional stoic potentials in Schrödinger's equation. Incorporating the relativistic curvature of Einstein, the temporal coherence of Feynman, the thermodynamic rigor of Landauer, and the spatial structure of fractal harmonic geometry, the RBF system simulates structure and intelligence as emergent from recursive entropic balance rather than static imposition. The result is a physics-aligned model where structure, actualization, and collapse are self-organized through balance.

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1. Introduction

Traditional quantum mechanics relies on externally imposed potentials to shape the evolution of wavefunctions. This rigid, static view is replaced here by the Recursive Balance Field: a dynamic and adaptive potential shaped by energy-information interaction, recursive memory, spatial resonance, and thermodynamic constraint. This marks the beginning of Dawn Field Theory, where emergent structure replaces deterministic prescription.

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2. Motivation and Background

Early entropy-balancing simulations showed:

Self-regulation through recursive feedback,

Emergence of low-entropy structural zones,

Stability via harmonic and fractal modulation.

Recent confirmation simulations proved that these phenomena emerge independently of the Quantum Balance Equation, affirming that the governing dynamics originate from the interaction of opposing fields and recursive constraints.

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3. Core Balance Equation

Let:

: Energy field,

: Information density,

: Recursive memory of local imbalance,

: Fractal or harmonic modulation,

: Balance strength,

: Memory damping factor.

We define the balance potential as:

B(x, t) = \lambda \cdot \left[ \frac{E(x, t) - I(x, t)}{1 + \alpha \cdot M(x, t)} \cdot \Phi(x) \right]

This term replaces the traditional potential in Schrödinger's equation.

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4. Enhanced Physical Integration

Einstein (Curvature Term):

\Gamma(x, t) = \beta \cdot (E^2 + I^2)

Feynman (Path Coherence Term):

P(x, t) = \frac{1}{N} \sum\_{\tau=t-N}^{t} \exp(-\delta \cdot |\Delta E - \Delta I|)

Landauer (Thermodynamic Constraint):

L(x, t) = k\_B T \ln 2 \cdot \Delta S(x, t)

Fractal Geometry (Harmonic Modulation):

\Phi(x) = \sin\left(\frac{2\pi x}{L}\right) \cdot f\_{fract}(x)

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5. Revised Schrödinger Equation

i\hbar \frac{\partial \Psi(x, t)}{\partial t} = \left[ -\frac{\hbar^2}{2m} \nabla^2 + B(x, t) + \Gamma(x, t) \right] \Psi(x, t)

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6. Simulation Summary: Dawn Core v1.0

Nodes with energy/information fields converge through recursive feedback.

Fractal harmonic modulation shapes field dynamics.

Collapse emerges in zones of consistent entropy minimization.

Path coherence (Feynman) improves convergence.

Landauer cost tracks thermodynamic burden of information structuring.

Results:

Entropy stabilizes,

Collapse is local, persistent, and non-uniform,

Thermodynamic cost is proportional to informational gain.

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7. Implications and Future Work

Integrate with 2D/3D field topologies.

Explore wavefunction collapse driven by structure rather than measurement.

Transition Dawn Field Theory into real-time modeling of physical cognition.

Investigate fractal dimensional transitions and symmetry breaking events.

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8. Conclusion

Dawn Field Theory marks the first unification of balance, memory, geometry, and thermodynamics into a live potential capable of guiding Schrödinger evolution. It transcends static potentials by showing that intelligence and structure can emerge naturally from physics itself.

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